What is claimed is:

1. A multidimensional electrophoresis device, for isoelectric focusing (IEF), or polyacrylamide gel electrophoresis (PAGE), or both of a fluid sample, comprising at least one microchannel having a length and a solid sieving material.

2. The multidimensional electrophoresis device, wherein the PAGE is dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE) or native PAGE.

3. The multidimensional electrophoresis device of claim 1, wherein the length is about 1 millimeter to about 5 centimeters.

4. The multidimensional electrophoresis device of claim 1, wherein the length is about 1 millimeter to about 2 centimeters.

5. The multidimensional electrophoresis device of claim 1, wherein the length is about 1 millimeter to about 1 centimeter.

6. The multidimensional electrophoresis device of claim 1, wherein the length is about 1 to about 7 millimeters.

7. The multidimensional electrophoresis device of claim 1, wherein the length is about 1 to about 5 millimeters.

8. The multidimensional electrophoresis device of claim 1, wherein the solid sieving material is a solid polymer gel.

9. The multidimensional electrophoresis device of claim 1, wherein the solid sieving material is made by UV-initiated polymerization.

10. The multidimensional electrophoresis device of claim 9, wherein the solid sieving material made by UV-initiated polymerization is polyacrylamide.

11. The multidimensional electrophoresis device of claim 9, wherein the photoinitiator used is 2,2'-Azobis (2-amidinopropane) dihydrochloride.

12. The multidimensional electrophoresis device of claim 1, which comprises a plurality of microchannels and wherein the plurality of microchannels comprise different solid sieving materials.

13. The multidimensional electrophoresis device of claim 12, wherein the solid sieving materials are of varying concentrations of at least one polymer between about 4% to about 20% (wt/vol).

14. The multidimensional electrophoresis device of claim 1, wherein at least one microchannel contains a gradient gel where the concentration of photoinitiated polymer changes from a low w/v percentage to high w/v percentage from one end of the microchannel to the other.

15. The multidimensional electrophoresis device of claim 1, wherein at least one microchannel contains a gradient gel where the concentration of at least one photoinitiated polymer changes from about 4% w/v percentage to about 20% w/v percentage from one end of the microchannel to the other.

16. The multidimensional electrophoresis device of claim 1, and further comprising a loading structure.

17. The multidimensional electrophoresis device of claim 16, wherein the loading structure is shared with at least two microchannels.

18. The multidimensional electrophoresis device of claim 1, and further comprising a cross channel through which the fluid sample may be electrokinetically injected into the microchannel.

19. The multidimensional electrophoresis device of claim 1, and further comprising a channel through which at least one reagent may be added and come into contact with the fluid sample.

20. The multidimensional electrophoresis device of claim 19, wherein the reagent is a dye, a label, or a buffer solution.

21. The multidimensional electrophoresis device of claim 1, wherein the microchannel comprises at least one bypass fluidic channel.

22. The multidimensional electrophoresis device of claim 1, and further comprising at least one chamber wherein the sample to be tested can be processed or chemically modified prior to being separated or analyzed.

23. The multidimensional electrophoresis device of claim 1, and further comprising at least one chamber that contains at least one reagent for conducting IEF, SDS-PAGE, or native PAGE.

24. The multidimensional electrophoresis device of claim 1, and further comprising at least one polymeric membrane which isolates at least two microchannels.

25. The multidimensional electrophoresis device of claim 24, wherein one microchannel is for IEF and the other microchannel is for SDS-PAGE, or native PAGE.

26. The multidimensional electrophoresis device of claim 24, wherein the polymeric membrane is formed or placed on top of the microchannel.

27. The multidimensional electrophoresis device of claim 26, wherein pressure applied to the polymeric membrane will close the microchannel and prevent fluid or current movement through the microchannel.

28. The multidimensional electrophoresis device of claim 1, wherein IEF, SDS-PAGE, or native PAGE takes about 5 minutes or less to perform.

29. The multidimensional electrophoresis device of claim 1, wherein IEF, SDS-PAGE, or native PAGE takes about 2 minutes or less to perform.

30. The multidimensional electrophoresis device of claim 1, wherein IEF, SDS-PAGE, or native PAGE takes about 1 minute or less to perform.

31. The multidimensional electrophoresis device of claim 1, wherein IEF, SDS-PAGE, or native PAGE takes about 30 seconds or less to perform.

32. The multidimensional electrophoresis device of claim 1, wherein IEF, SDS-PAGE, or native PAGE takes about 10 to about 30 seconds to perform.

33. The multidimensional electrophoresis device of claim 1, wherein the fluid sample comprises at least one protein.

34. The multidimensional electrophoresis device of claim 1, wherein IEF is conducted in at least one horizontal microchannel between two electrodes and SDS-PAGE or PAGE is conducted in at least one vertical microchannel between two pairs of electrodes, wherein one pair of electrodes is placed above the two electrodes of the horizontal microchannel and the other pair of electrodes is placed below the two electrodes, whereby conducting IEF when the electrodes on the right side are of one voltage and the electrodes on the left side are of another voltage prevents the fluid sample from migrating through the vertical microchannel.

35. An assay for analyzing a fluid sample which comprises using the multidimensional electrophoresis device of claim 1.

36. An assay for analyzing a fluid sample which comprises using the multidimensional electrophoresis device of claim 24.

37. An assay for analyzing a fluid sample which comprises using the multidimensional electrophoresis device of claim 34.

38. A kit for analyzing a fluid sample which comprises the multidimensional electrophoresis device of claim 1 packaged together with at least one reagent necessary for conducting IEF or PAGE separations.

39. The kit of claim 38, and further comprising a device for injecting the fluid sample into the multidimensional electrophoresis device.

40. The kit of claim 38, and further comprising a label, at least one reagent, at least one device, or at least one means for obtaining a visually observable result.